



KSU REACTOR SHARING PROGRAM

Kansas State University
TRIGA Mark II Nuclear Reactor Facility

License R-88

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**Final Technical Report for Department of Energy
Grant DE-FG02-95NE38131 ✓
(30 September 1995 to 31 August 2001)**

Department of Mechanical and Nuclear Engineering
Kansas State University
302 Rathbone Hall
Manhattan, KS 66506

K-State Nuclear Reactor Facility
110 Ward Hall
Manhattan, KS 66506

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Executive Summary:

This report is a final culmination of activities funded through the Department of Energy's (DOE) University Reactor Sharing Program, Grant DE-FG02-95NE38131, during the period 30 September 1995 through 31 August 2001. Progress reports have been periodically issued to the DOE, are contained as appendices to this report. Due the extent of time covered by this grant, summary tables are presented.

Table 1 lists the fiscal year financial obligations of the grant. As listed in the original grant proposals, the DOE grant financed 70% of project costs, namely the total amount spent of these projects minus materials costs and technical support. Thus the bulk of funds were spent directly on reactor operations. With the exception of a few years, spending was in excess of the grant amount.

As shown in Table 2 the Reactor Sharing grant funded a number of research projects in nuclear engineering, geology, animal science, chemistry, anthropology, veterinary medicine, and many other fields. Out of the average 3000 visitors per year, some groups participated in classes involving the reactor such as Boy Scout Merit Badge classes, teacher's workshops, and summer internships. A large number of these projects met the requirements for the Reactor Sharing grant, but were funded by the University instead.

Table 1: Fiscal Year Financial Record of DOE Grant DE-FG02-95NE38131

Fiscal Year	DOE Grant Amount	Reactor Time (h)	Est. # Samples Run	Cost per Hour	Cost per Sample	Project Cost	Materials Costs	Technical Support	Total Amount Spent
1996	\$6,560	309	60	\$100	\$30	\$32,700	\$400	0	\$33,100
1997	\$6,500	388	94	\$100	\$30	\$41,620	\$400	\$700	\$42,420
1998	\$6,500	458	161	\$100	\$30	\$50,630	\$400	0	\$51,030
1999	\$8,500	440	118	\$100	\$30	\$47,540	\$600	0	\$48,540
2000	\$8,500	473	117	\$100	\$30	\$50,810	\$600	0	\$51,410
Totals	\$36,560	2068	550			\$223,300	\$2400	\$700	\$226,500.00

Table 2: Summary of Reactor Utilization (30 September 1995 through 31 August 2001)

Fiscal Year:	95/96	96/97	97/98	99/00	00/01
a. Total hours of operation*	309	388	458	440	473
b. MWh of thermal energy production	24	28	38	x	x
c. Hours operation at full power	90	113	154	96	53
d. Operating hours in a typical week	6.2	7.8	9.2	8.5	9.1
e. Experiment hours irradiation services	153	232	302	188	264
f. Nuclear engineering students using reactor for research	2	2	1	2	2

Table 2 (Continued)

Fiscal Year:		95/96	96/97	97/98	99/00	00/01
g.	KSU academic departments using reactor in instructional programs					
	Mechanical/Nuclear engineering	x	x	x	x	x
	Chemistry	x	x	x	x	x
	History	x	x	x	x	x
	Animal and Food Science	x	x	x	x	x
	Agricultural and Biological Engineering		x	x		
	Biology				x	
h.	KSU academic departments using reactor in research program					
	Mechanical/Nuclear engineering	x	x	x	x	x
	Geology	x	x	x	x	x
	Anthropology	x				
i.	Outside direct Users					
	ANS Teacher's Workshop	x	x			
	Engineering Summer Science Institute	x	x	x	x	x
	4-H Discovery Days	x	x	x	x	x
	Kansas Highway Patrol		x			
	Great Bend High School		x			
	State University of New York			x	x	x
	University of Kansas			x	x	x
	Omaha Veterans Administration Hospital			x		
	Creighton University			x		
	Boy Scout Atomic Energy Badge			x		
	University of Missouri at Kansas City					x
	Washington University of Saint Louis					x
j.	Outside indirect Users (Cooperative Geology Research)				NR	NR
	University degli Studi della Basilicata	x	x			
	University of Maine	x				
	State University of New York	x				
	Virginia Technical University	x	x			
	University of Nevada-Reno		x	x		
	University of Madras, India		x			
	Russian Academy of Science, St. Petersburg		x	x		
	Miami University			x		

*Total hours of operation includes experiment hours, full power hours and thirteen hours a month for sample preparation, maintenance and reactivity balances

NR = Not Recorded

Table 3: Visitors to Facility (30 September 1995 through 31 August 2001)

	95/96	96/97	97/98	99/00	00/01
a. Participants of workshops or institutes	122	168	129	IE	IE
b. Private individuals/clubs	783	672	527	638	1070
c. Secondary and Junior college students	225	379	494	285	229
d. College and university students	644	649	607	1304	574
e. Open-house participants	423	579	510	461	556
Total					

IE= included else-were, probably in private individuals/clubs category

Appendices:
KSU Reactor Facility Annual Reports Fiscal Years 1996-2001